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# ECLIPSE STATIONS IN OREGON AND WASHINGTON

By SIDNEY D. TOWNLEY

During an automobile trip from Stanford University to the eastern part of Oregon last summer, I took occasion to examine several sites near the central line of the path of Moon's shadow, for the eclipse of June 8, 1918.

The first place on the central line of totality that we passed thru was Heppner, the county seat of Morrow County, Oregon. Heppner is located in the great central plateau of Oregon between the Cascade Mountains on the west and the Blue Mountains on the east. This is a semi-arid region, the landscape being made up of a succession of rolling hills of immense size. The hills are barren, the only trees being found in the canyons. Heppner is in the center of a vast wheat-raising and grazing country. The town is located in a narrow canyon and may be reached by means of a branch of the Oregon-Washington Railroad and Navigation Company line, leaving the main line at Heppner Junction about half-way between The Dalles and Pendleton. Heppner is forty-five miles from the main line. The hills immediately surrounding Heppner—several hundred feet above the town—would certainly be fine locations from which to observe the eclipse, but there would be no shade upon them and water would not be easily obtained. There are some fairly level places in the neighborhood of the Court House that might be used. Heppner is at an altitude of 1950 feet. The population is about 1000 and there is a good hotel.

I believe the chances for clear weather at Heppner are very good. The annual rainfall for the semi-arid region is small and the summers are hot and dry. The spring rains may extend into June and there are occasional thunder-storms in July and August. Last summer was very dry in this region and there was practically no rain from April to the middle of September. We passed thru Heppner on July 17th, on our up-trip, and the day was one of the hottest experienced during the summer.

The next place on the central line which we visited was Baker, the county seat of Baker County, Oregon. Baker is a city of between 5000 and 10,000 inhabitants and has an elevation of 3471 feet. It is located in a valley on the east side of the main range of the Blue Mountains. The immediate surroundings are flat, with some small hills to the east. There are numerous good locations on

the edge of town, the best probably being at the Fair Grounds. These are located about one and a half miles northwest of the center of the town. The ground is level; there are buildings and sheds and city water, but no trees. The Elkhorn range of mountains, the peaks of which rise from 6000 to 9000 feet in height, lies about a dozen miles to the west of the city, the direction in which the Sun will be seen at the time of eclipse. The highest of these peaks will cut off about five degrees of the horizon, which will not be enough to interfere in any way with the observations of the Sun.

Afternoon thunder-storms occasionally occur in the Blue Mountains during the summer months, and it is within the range of the possible that thunder-clouds would be hanging over the ridge to the west of Baker at the time of the eclipse. June 8th, however, is rather early in the season for thunder-storms and unless the season is very early there probably will be very little danger from this source. Indeed, if the season is very late observers might be confronted with just the opposite conditions—a spring rain or even a snow-storm.

In 1914 I spent from May 28th to June 5th at Union, forty miles north of Baker. The weather then was really and truly “unusual” as the following notes from my diary will indicate: May 28th, “Very cold, frost last night”; May 29th, No entry in diary concerning weather but I remember that the day was pleasant; May 30th, “Much warmer”; May 31st, “Thunder-storm over mountains in afternoon. Only a few drops of rain in valley”; June 1st, “Cloudy”; June 2nd, “Thunder, lightning, hail and torrents of rain in afternoon”; June 3rd, “Very cold”; June 4th, “*Snowed* from 7 A. M. to 3 P. M. Melted as fast as it fell but mountains are covered. Went to Stock Show in afternoon. Wild West stunts in the mud”; June 5th, “Left Union for Portland at 10 A. M. Still very cold. Arrived in Portland at 8 P. M. Raining.” Snow in June is of course very unusual for that section of the country and there is very little likelihood that these conditions will be repeated in 1918.

On our return trip we passed thru Heppner again on September 5th, and camped that night near Rock Creek, which is very near the central line of the eclipse path and on a branch railroad which runs from Arlington to Condon. There is nothing but a cross-roads store at Rock Creek and the surrounding country is similar to that around Heppner. That night there was a thunder-storm which

brought the first rain in three months. When we made camp there were no signs of rain and we did not put up our tent, so we all had to scramble into the auto at about 1 A. M.

From Rock Creek to Hood River we were continuously within the path of totality but did not again cross the central line. The central line crosses the Columbia River near the mouth of the John Day River and passes near the small station of John Days. This is a rather barren region of sand and rocks but it is also the region of *least* rainfall for the states of Oregon and Washington. There is, therefore, perhaps a greater chance for clear weather here, on either side of the Columbia, than at any other place in the two states just mentioned. The only objection so far as I can see to locating near John Days, or on the north bank of the Columbia near Goldendale, is the possibility of having a sand-storm. This semi-arid region of Oregon and Washington is sometimes visited by fierce winds, when the atmosphere becomes filled with dust and sand, which is very disagreeable to say the least. Any one who has traveled along this part of the Columbia River in a sand-storm does not need to be told that these are not very agreeable experiences.

After reaching Portland, on our return trip, we intended to go over into Washington to Chehalis to inspect the nature of the country along that part of the line of totality, but a seven-day rain made the trip inadvisable. This rain, September 7th to 13th, broke a dry spell of 69 days, one of the longest ever known in Portland.

Many people have an entirely erroneous idea concerning the climate of Oregon and Washington. Oregon used to be nicknamed the web-foot state—suggesting a country where it always rains. There are places along the coast of Oregon and Washington where the annual rainfall is from 60 to 100 inches, yet on the other hand there are places in the interior of these states where the annual rainfall is less than seven inches. The Cascade range of mountains divides these states into two parts climatically quite different. The storms come from the west and northwest. A very large percentage of the moisture is extracted by the Coast ranges and the Cascades, still more moisture is extracted by the Blue Mountains of eastern Oregon, while very little or none falls in the great plateau region between these two ranges. The vegetation of course indicates the amount of rainfall in these different regions. West of the Cascades there is a rank growth of timber and underbrush. In the Blue Mountains there is also timber and underbrush but not nearly

so rank as in the west. In the region between these two ranges there are vast stretches entirely devoid of timber except for a scattering growth along the creek bottoms. The summer climate of Washington and Oregon east of the Cascades is very similar to the summer climate of California. The rains continue later in the spring and begin earlier in the fall in the northern section than in the southern, but the months of June, July and August are rainless, with the exception of *occasional* thunder-storms.

In the first part of this article I have spoken of the possibility of thunder-storms at Heppner and Baker, but I wish to guard against the possibility of conveying the idea that these are of frequent occurrence. There will perhaps be two or three a season and not two or three a week as in some of the eastern states. People go camping in the summer with very little thought of rain and they are seldom caught. The chances of the eclipse being obscured by a thunder-storm in the region under discussion are, I think, very small.

The following table, most of the data of which were kindly furnished me by Mr. A. H. Palmer of the U. S. Weather Bureau Office of San Francisco, will give some idea of the possible weather conditions along or near the path of totality in the states of Washington and Oregon.

Station	Elevation above sea level (feet)	Aver. No. rainy days in June (.01 in. or more)	Average rainfall in June (inches)	Average annual rainfall (inches)
Southbend, Wash. ....	.....	.....	3.81	89.19
Chehalis, Wash. ....	.....	.....	2.30	45.77
Lyle, Wash. ....	600	6	0.87	25.89
Fort Simcoe, Wash. ....	1427	2	0.45	.....
Sunnyside, Wash. ....	740	4	0.36	6.65
Kennewick, Wash. ....	367	3	0.28	6.34
Blalock, Ore. ....	237	2	0.52	9.48
Umatilla, Ore. ....	340	4	0.40	8.43
Condon, Ore. ....	2891	4	1.21	11.98
Heppner, Ore. ....	1950	6	1.04	14.37
Pendleton, Ore. ....	1272	6	0.97	14.08
Baker, Ore. ....	3471	8	1.21	12.88

This table shows clearly the great difference in the annual rainfall on the two sides of the Cascades. Southbend and Chehalis are west of the Cascades, Lyle is on the Columbia River in the pass thru the mountains and all the other places are east of the Cas-

caedes. Sunnyside is only about 180 miles east of Southbend, yet there is a difference of over 80 inches in the annual rainfall of the two places.

The sunshine records for Walla Walla, which is somewhat north of the line of totality, are as follows:

Year	Hours of sunshine in June	Per cent of possible sunshine
1914.....	321	68
1915.....	368	78
1916.....	307	65
1917.....	331	70
Average.....		70

These meteorological data show, I think, that there is a very good chance of clear weather on June 8th anywhere along the path of totality from Goldendale to Baker, with the chances somewhat in favor of the western end of the line. The only places accessible by railway are Goldendale, John Days, Quinns, Squally Hook, Blalock, Rock Creek, Heppner and Baker. Other places on the central line can be reached by automobile, but nothing in particular is to be gained by getting away from the railroad. John Days, Quinns, Squally Hook, and Blalock are small stations on the main line of the Oregon-Washington Railroad and Navigation Co. line near the point where the central line of totality crosses the Columbia River.<sup>1</sup>

Each of the places mentioned above has its advantages and disadvantages, some of which have been mentioned in the first part of this article. Parties from California wishing to reach the nearest favorable location could hardly do better than to stop along the Columbia River or go to Goldendale, Washington. Parties coming from the East might well stop at Baker, which may also be reached from California by automobile without going to the Columbia River region.

Unless the summer is backward, early June will be a favorable time for an auto trip to Oregon, and in the April number of these PUBLICATIONS I hope to have a short article describing automobile routes to the path of totality.

<sup>1</sup>According to the timetable of the Oregon-Washington Railroad and Navigation Co. the names of the places John Days, Quinns, and Squally Hook, taken from an old map, have been changed to Day, Quinton, and Hook, respectively.